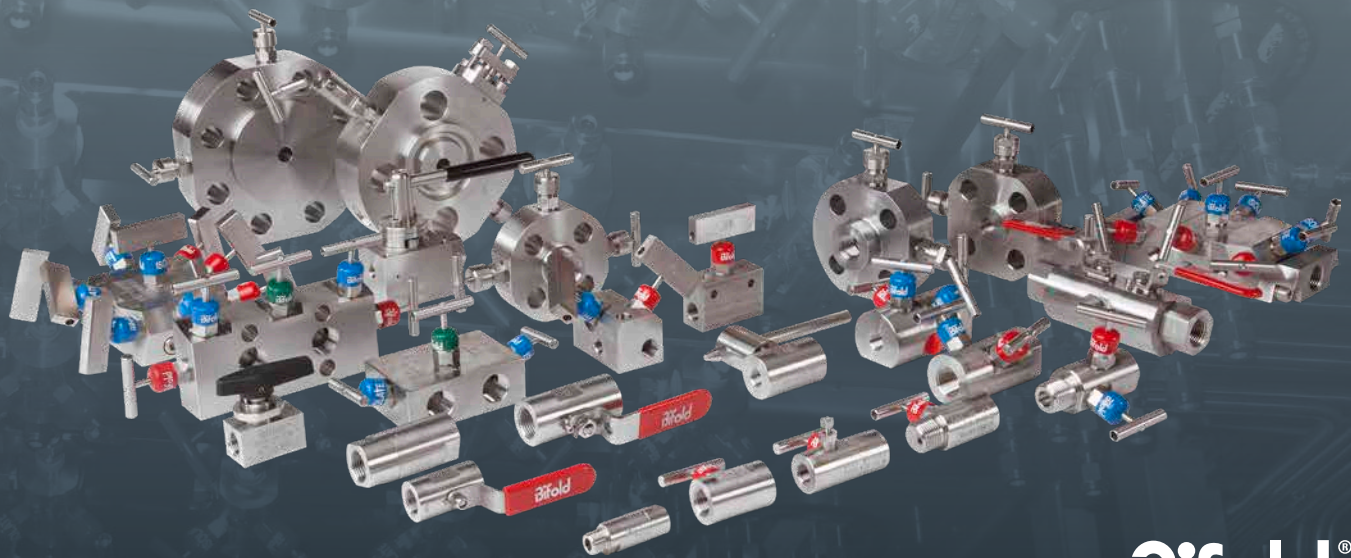


rotork®

Keeping the World Flowing
for Future Generations

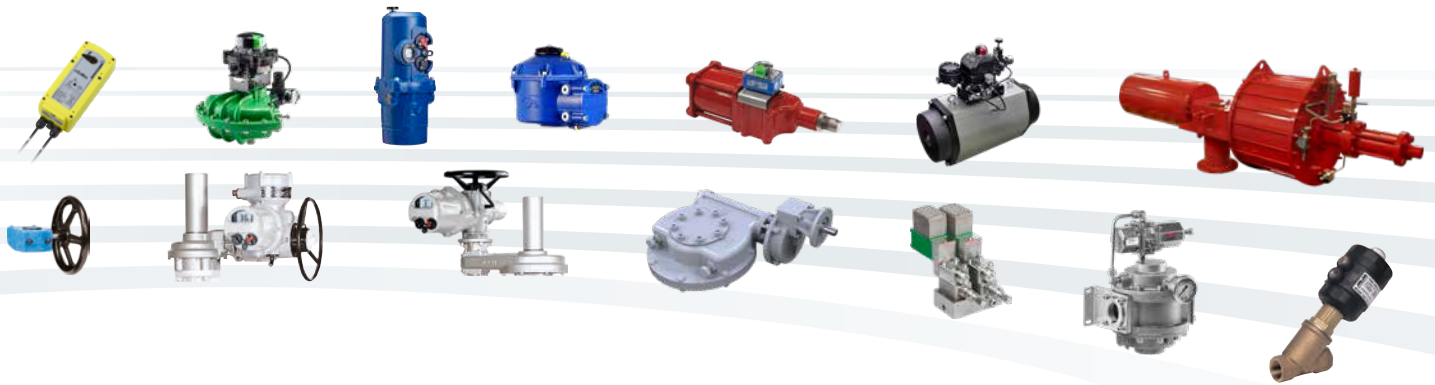
Instrumentation ball and needle valves



Bifold®
A rotork® Brand

Up to and including 10,000 psi / 690 bar

Reliability in critical flow control applications



› Reliable operation when it matters

Assured reliability for critical applications and environments. Whether used infrequently or continuously, Rotork products will operate reliably and efficiently.

› Quality-driven global manufacturing

We offer products that have been designed with over 60 years of industry and application knowledge.

Our research and development ensures cutting edge products are available for multiple applications across multiple industries.

› Customer focused service and worldwide support

Rotork solve customer challenges and develop new solutions that are tailored to the needs of our clients.

We offer dedicated, expert service and support from initial inquiry, to product installation, to long-term after sales care.

› Low cost of ownership

Long-term reliability prolongs service life.

Rotork helps to reduce long-term cost of ownership and provides greater efficiency to process and plant.

Instrumentation ball and needle valves

Section	Page	Section	Page
Features and benefits	4	Extended ball valve product range	44
Product portfolio – innovative range	7	Extended needle valve & ball and needle manifold product range	45
Preferred range selection chart	9	Site services	46
Preferred range datasheets	14		



Comprehensive product range serving multiple industries

Rotork products offer improved efficiency, assured safety and environmental protection across sectors such as the Power, Oil & Gas, Water & Wastewater, HVAC, Marine, Mining, Pulp & Paper, Food & Beverage, Pharmaceutical and Chemical sectors.

Market leaders and technical innovators

We have been the recognised market leader in flow control for over 60 years.

Our customers rely upon Rotork for innovative solutions to safely manage the flow of liquids, gases and powders.

Global presence, local service

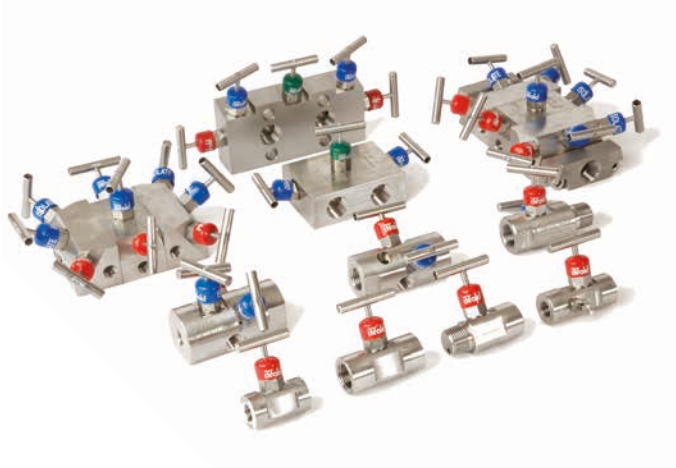
We are a global company with local support.

Manufacturing sites, service centres and sales offices throughout the world provide unrivalled customer services, fast delivery and ongoing, accessible support.

Environmental Social and Governance is at the heart of our business

We have a range of policies in place that support our performance across environmental, social and governance topics. The majority of our policies are publicly available.

Superior performance throughout the **full operational range**



› State-of-the-art design to reduce potential leak paths

› Stem seal design prevents galling and contamination

› Low operating torque

› Non-rotating, anti-galling tip as standard

› Worldwide instrumentation approvals

› Unique compact design to save space and weight

› Viton / RTFE stem sealing – maintenance free

› Available from 1,000 psi / 70 bar to 10,000 psi / 690 bar

Features and benefits

Rotork Bifold has manufactured ball and needle valve products for more than 20 years. Our innovative product range has been designed to overcome the problems of traditional assemblies on primary isolation and venting duties.

The needle valve range incorporates a dynamic sealing system along with a compact design. These valves can be direct mounted to the back plate of a panel and require a low torque input to operate.

Our ball valve range is manufactured and supplied complete with an anti-blowout stem and require a low torque input to operate.



Instrumentation needle valves

Dynamic sealing

- Eliminates the loss of sealing integrity often experienced over the life time of traditional packing glands, reducing the risk of fugitive emissions

Compact patented design

- Sleek lightweight body with smaller envelope enabling closer mounting, ease of installation and a significant reduction in overall panel size and weight

Direct mount to back plate

- All needles and vents off the back plate enabling lower cost panel construction. No panel cut-outs or spacers required for vents and needle heads

Non-wetted parts

- Needle head threads are clean from process fluid corrosion or contamination using a metal-to-metal bonnet seal and pre-thread stem seals

Lower torque to operate

- No need to mount on a back plate to counteract torque
- There are design differences between the fire safe and non-fire safe products



Features and benefits

Instrumentation ball valves

Single-piece body

- Reduces potential leak paths to the outside environment

Anti-blowout stem

- The internally loaded and retained stem eliminates risk of injury to operators caused by potential stem blowouts

Pressure energised stem seal

- Combined with an anti-blowout stem, the internally loaded pressure energised stem seals, ensure sealing integrity is maintained regardless of outside influences/interferences such as removal of the handle

Lower and consistent torque to operate

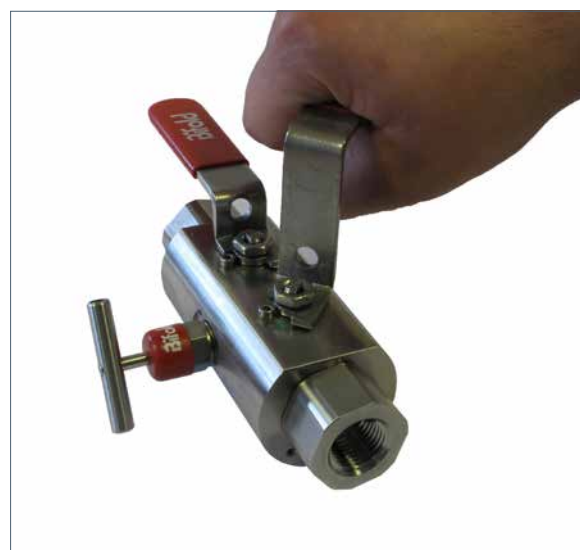
- The unique design principles eliminate the effect of manufacturing variance, ensuring operating torques are both low and consistent throughout the batch

Pressure tested

- Pressure tested in accordance with AP1 598 & BS EN 12266-1. Proof tested to 1.5 times maximum working pressure

Why use Rotork Bifold?

- Innovatively progressed and optimised designs throughout our product range
- Rotork Bifold constantly carry out vigorous research and development on all of our products, ensuring that our valves represent the best of what we do
- Our state-of-the-art production facilities based in the UK, allow our superior and innovative designs of products to be manufactured on site, assembled to the finished product and tested to rigorous quality standards
- There are design differences between the fire safe and non-fire safe products



Product portfolio – innovative range

Instrumentation needle valves

The needle valve range is available as a one piece body construction with pressures ranging from 6,000 psi / 414 bar up to 10,000 psi / 690 bar and sizes ¼" NPT to 1" NPT. Within the needle valve range, we also offer a medium pressure design ranging from 10,000 psi / 690 bar up to 20,000 psi / 1,380 bar (see our medium pressure instrumentation valves, fittings and relief valves catalogue).



Instrumentation ball valves

The ball valve range utilises a state-of-the-art design to reduce potential leak paths with a standard pressure ranging from 1,000 psi / 70 bar up to 10,000 psi / 690 bar and sizes ¼" NPT to 2" NPT. Within the ball valve range, we also offer a medium pressure design ranging from 10,000 psi / 690 bar up to 20,000 psi / 1,380 bar (see our medium pressure instrumentation valves, fittings and relief valves catalogue). For optimum performance, recommended working range should be 0% to 100% of MWP for models up to 2,000 psi and 15% to 100% for models above 2,000 psi.



Instrumentation manifolds

Suitable for shutting off the impulse lines and for mounting pressure and directional pressure instruments. These manifolds are for direct mounting onto pressure transmitters furnished with mounting interface in accordance with DIN 61518. The manifolds are supplied as standard with ½" NPT female threaded inlet and vent connections.



Product portfolio – innovative range

State-of-the-art manufacturing

Rotork Bifold operates a lean and integrated manufacturing policy alongside a unique business model, effectively reducing lead times and providing peace of mind to contractors, installers and end users for over a century. Our state-of-the-art UK production facilities allow our innovative products to be assembled and tested to meet rigorous quality standards.

All Rotork Bifold valves have product traceability via a unique serial number stamped on all valve bodies. This links the valve with their testing and component certificates, materials of construction and full Manufacturers Record Book (MRB).


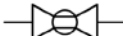

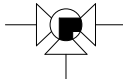


ISO9001 product certification and specialist testing options include:

- Non-destructive testing including Liquid Penetrant Inspection (LPI), Magnetic Particle Inspection (MPI), Positive Material Identification (PMI) and Ferrite testing
- Hydrostatic and pneumatic testing
- Nitrogen gas testing
- Nitrogen/helium leak detection
- Low temperature testing
- Fugitive emission testing
- Hydrogen Induced Cracking (HIC) testing and other specialist material tests








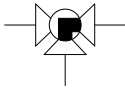




Preferred range – instrumentation ball valves

Instrumentation ball valves (up to and including 10,000 psi / 690 bar)

Product	Schematic representation	Product code	Product description	Page No.
 <p>BV01 Single isolation ball valve, low pressure</p>		BV0104F025TT1KLK-N	¼" NPT, single isolation valve, ball configuration, 1,000 psi / 70 bar, lockable handle	14
		BV0108F029.2TT1KLK-N	½" NPT, single isolation valve, ball configuration, 1,000 Psi / 70 bar, lockable handle	
		BV0112F0212.5TT1KLK-N	¾" NPT, single isolation valve, ball configuration, 1,000 Psi / 70 bar, lockable handle	
		BV0116F0215TT1KLK	1" NPT, single isolation valve, ball configuration, 1,000 Psi / 70 bar, lockable handle	
		BV0132F0232TT1KLK	2" NPT, single isolation valve, ball configuration, 1,000 Psi / 70 bar, lockable handle	
 <p>BV02 3-way ball valve, low pressure</p>		BV02SL04F0211TT1KLK	¼" NPT, 3-way valve, side entry, I-ported ball configuration, 1,000 psi / 70 bar, lockable handle	15
		BV02SL08F0212.5TT1KLK	½" NPT, 3-way valve, side entry, I-ported ball configuration, 1,000 psi / 70 bar, lockable handle	
		BV02SL12F0215TT1KLK	¾" NPT, 3-way valve, side entry, I-ported ball configuration, 1,000 psi / 70 bar, lockable handle	
		BV02SL16F0220TT1KLK	1" NPT, 3-way valve, side entry, I-ported ball configuration, 1,000 psi / 70 bar, lockable handle	
		BV02SL32F0238TT1KLK	2" NPT, 3-way valve, side entry, I-ported ball configuration, 1,000 psi / 70 bar, lockable handle.	
 <p>BV01 Single isolation ball valve</p>		BV0104F025ERV6K	¼" NPT, single isolation valve, ball configuration, 6,000 psi / 414 bar	16
		BV0104F025ERV10K	¼" NPT, single isolation valve, ball configuration, 10,000 psi / 690 bar	
		BV0106F025ERV6K	⅜" NPT, single isolation valve, ball configuration, 6,000 psi / 414 bar	
		BV0106F025ERV10K	⅜" NPT, single isolation valve, ball configuration, 10,000 psi / 690 bar	




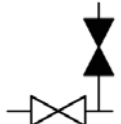

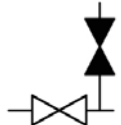

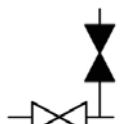

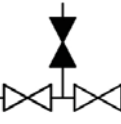
Preferred range – instrumentation ball and needle valve range

Instrumentation ball and needle valves (up to and including 10,000 psi / 690 bar)

Product	Schematic representation	Product code	Product description	Page No.
 <p>BV01 Single isolation ball valve, panel mount</p>		BV0104F025EV6KPM	¼" NPT, single isolation valve, ball configuration, 6,000 psi / 414 bar, panel mount	18
		BV0104F025EV10KPM	¼" NPT, single isolation valve, ball configuration, 10,000 psi / 690 bar, panel mount	
		BV0106F025EV6KPM	⅜" NPT, single isolation valve, ball configuration, 6,000 psi / 414 bar, panel mount	
		BV0106F025EV10KPM	⅜" NPT, single isolation valve, ball configuration, 10,000 psi / 690 bar, panel mount	
 <p>BV01 Single isolation ball valve</p>		BV0108F0210ERV6K	½" NPT, single isolation valve, ball configuration, 6,000 psi / 414 bar. Available in a three piece configuration	20
		BV0108F0210ERV10K	½" NPT, single isolation valve, ball configuration, 10,000 psi / 690 bar. Available in a three piece configuration	
 <p>BV02 3-way ball valve</p>		BV02SL08F0210ERV6K	½" NPT, 3-way valve, side entry, I-ported ball configuration, 6,000 psi / 414 bar	22
		BV02SL08F0210ERV10K	½" NPT, 3-way valve, side entry, I-ported ball configuration, 10,000 psi / 690 bar	
 <p>BV05 Double block & bleed, ball & needle valve manifold</p>		BV0504F02F025ERV6K	¼" NPT, DBB manifold, ball - needle - ball configuration, 6,000 psi / 414 bar, ⅛" NPT vent port	24
		BV0504F02F025ERV10K	¼" NPT, DBB manifold, ball - needle - ball configuration, 10,000 psi / 690 bar, ⅛" NPT vent port	
		BV0506F02F025ERV6K	⅜" NPT, DBB manifold, ball - needle - ball configuration, 6,000 psi / 414 bar, ⅛" NPT vent port	
		BV0506F02F025ERV10K	⅜" NPT, DBB manifold, ball - needle - ball configuration, 10,000 psi / 690 bar, ⅛" NPT vent port	
 <p>BV05 Double block & bleed, ball & needle valve manifold</p>		BV0504F0210ERV6K	¼" NPT, DBB manifold, ball - needle - ball configuration, 6,000 psi / 414 bar, ¼" NPT vent port	26
		BV0504F0210ERV10K	¼" NPT, DBB manifold, ball - needle - ball configuration, 10,000 psi / 690 bar, ¼" NPT vent port	
		BV0508F04F0210ERV6K	½" NPT, DBB manifold, ball - needle - ball configuration, 6,000 psi / 414 bar, ¼" NPT vent port	
		BV0508F04F0210ERV10K	½" NPT, DBB manifold, ball - needle - ball configuration, 10,000 psi / 690 bar, ¼" NPT vent port.	


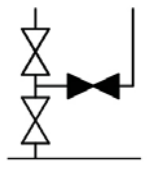

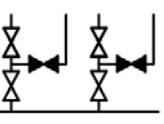

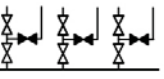
Preferred range – instrumentation needle valve range

Instrumentation needle valves (up to and including 10,000 psi / 690 bar)

Product	Schematic representation	Product code	Product description	Page No.
 <p>NV01 Single isolation needle valve</p>		NV0104F02M5V6K	¼" NPT, single isolation valve, needle configuration, 6,000 psi / 414 bar	28
		NV0104F02M5V10K	¼" NPT, single isolation valve needle configuration, 10,000 psi / 690 bar	
		NV0108F02M5V6K	½" NPT, single isolation valve, needle configuration, 6,000 psi / 414 bar	
		NV0108F02M5V10K	½" NPT, single isolation valve, needle configuration, 10,000 psi / 690 bar	
 <p>NV03 Block & bleed needle valve manifold captive vent plug</p>		NV0304F02M5V6K	¼" NPT, block & bleed manifold, needle - captive vent plug configuration, 6,000 psi / 414 bar	30
		NV0304F02M5V10K	¼" NPT, block & bleed manifold, needle - captive vent plug configuration, 10,000 psi / 690 bar	
		NV0308F02M5V6K	½" NPT, block & bleed manifold, needle - captive vent plug configuration, 6,000 psi / 414 bar	
		NV0308F02M5V10K	½" NPT, block & bleed manifold, needle - captive vent plug configuration, 10,000 psi / 690 bar	
 <p>NV022 Block & bleed needle valve compact manifold</p>		NV2204F02M3V6K	¼" NPT, compact manifold, needle - needle configuration, 6,000 psi / 414 bar, ¼" NPT vent port	32
		NV2204F02M3V10K	¼" NPT, compact manifold, needle - needle configuration, 10,000 psi / 690 bar, ¼" NPT vent port	
		NV2208F04F02M3V6K	½" NPT, compact manifold, needle - needle configuration, 6,000 psi / 414 bar, ¼" NPT vent port	
		NV2208F04F02M3V10K	½" NPT, compact manifold, needle - needle configuration, 10,000 psi / 690 bar, ¼" NPT vent port	
 <p>NV04 Block & bleed needle valve manifold</p>		NV0404F02M5V6K	¼" NPT, block & bleed manifold, needle - needle configuration, 6,000 psi / 414 bar, ¼" NPT vent port	34
		NV0404F02M5V10K	¼" NPT, block & bleed manifold, needle - needle configuration, 10,000 psi / 690 bar, ¼" NPT vent port	
		NV0408F04F02M5V6K	½" NPT, block & bleed manifold, needle - needle configuration, 6,000 psi / 414 bar, ¼" NPT vent port	
		NV0408F04F02M5V10K	½" NPT, block & bleed manifold, needle - needle configuration, 10,000 psi / 690 bar, ¼" NPT vent port	
THIS PRODUCT DESIGN IS UNIQUE TO BIFOLD AND PATENTED				
 <p>NV05 Double block & bleed needle valve manifold</p>		NV0504F02M5V6K	¼" NPT, DBB manifold, needle - needle - needle configuration, 6,000 psi / 414 bar, ¼" NPT vent port	36
		NV0504F02M5V10K	¼" NPT, DBB manifold, needle - needle - needle configuration, 10,000 psi / 690 bar, ¼" NPT vent port	
		NV0508F04F02M5V6K	½" NPT, DBB manifold, needle - needle - needle configuration, 6,000 psi / 414 bar, ¼" NPT vent port	
		NV0508F04F02M5V10K	½" NPT, DBB manifold, needle - needle - needle configuration, 10,000 psi / 690 bar, ¼" NPT vent port	
THIS PRODUCT DESIGN IS UNIQUE TO BIFOLD AND PATENTED				

Preferred range – instrumentation needle valve range

Instrumentation needle valves (up to and including 10,000 psi / 690 bar)

Product	Schematic representation	Product code	Product description	Page No.
 <p>NV06 1 Double block & bleed single station needle valve manifold</p>		NV06104F02M3V6K	¼" NPT, DBB single station manifold, needle - needle - needle configuration, 6,000 psi / 414 bar	38
		NV06104F02M3V10K	¼" NPT, DBB single station manifold, needle - needle - needle configuration, 10,000 psi / 690 bar	
		THIS PRODUCT DESIGN IS UNIQUE TO BIFOLD AND PATENTED		
 <p>NV06 2 Double block & bleed two station needle valve manifold</p>		NV06204F02M3V6K	¼" NPT, DBB two station manifold, needle - needle - needle configuration, 6,000 psi / 414 bar	40
		NV06204F02M3V10K	¼" NPT, DBB two station manifold, needle - needle - needle configuration, 10,000 psi / 690 bar	
		THIS PRODUCT DESIGN IS UNIQUE TO BIFOLD AND PATENTED		
 <p>NV06 3 Double block & bleed three station needle valve manifold</p>		NV06304F02M3V6K	¼" NPT, DBB three station manifold, needle - needle - needle configuration, 6,000 psi / 414 bar	42
		NV06304F02M3V10K	¼" NPT, DBB three station manifold, needle - needle - needle configuration, 10,000 psi / 690 bar	
		THIS PRODUCT DESIGN IS UNIQUE TO BIFOLD AND PATENTED		

Technical attributes

Instrumentation ball and needle valve range

Materials

Stainless Steel, UNS S31600 / S31603, is used throughout for metallic parts as the standard option. Other options are: Carbon Steel (LF2) with F316 trim; Duplex (UNS S31803) throughout and Super Duplex (UNS S32760) throughout.

All material options are in compliance with NACE MR0175 (ISO 15156).

Pressure ratings

Maximum pressure ratings of 1,000 psi / 69 bar, 6,000 psi / 414 bar and 10,000 psi / 690 bar depending on seat material selection. The selection chart for each product shows the maximum available.

Pressure rating at elevated temperatures is limited, in-line with the graphs shown below. Pressure rating is also limited by connection type, in-line with the table shown below.

Temperature

Using the correctly selected seal material, all valves have a minimum temperature rating of -20 °C (-4 °F) and a maximum of +200 °C (392 °F). Pressure ratings at temperature are limited in-line with the graphs shown below.

Additional seal materials (not listed) are available to extend this capability to a minimum of -60 °C (-76 °F) and a maximum of + 300 °C (+572 °F). Pressure ratings will be limited at these extremes; consult with Rotork Bifold for further details.

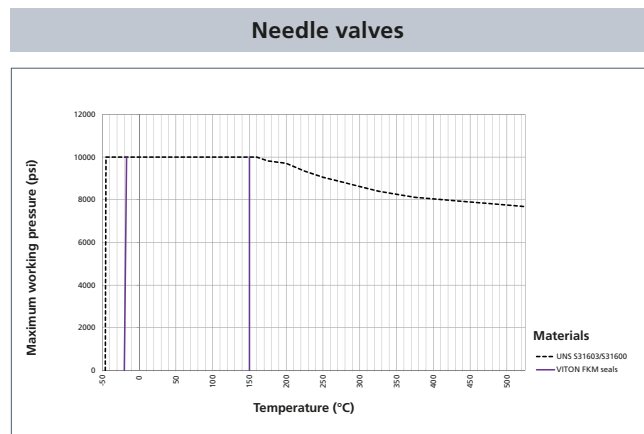
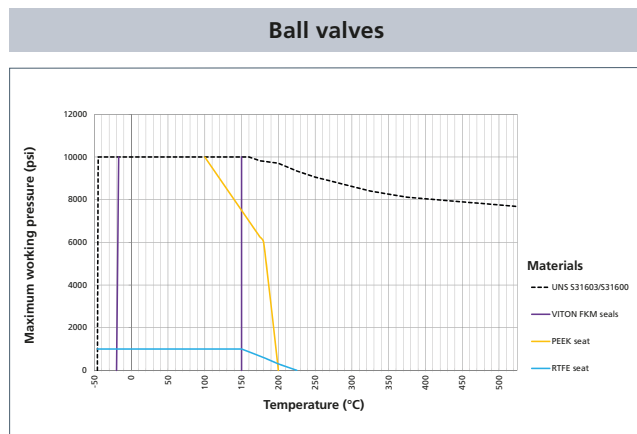
Operating media

With suitably selected seal materials, all valves can be used with a wide variety of fluids and are also suitable for gas service where the '-NT' option is selected.

Connection pressure rating (psi)

Nominal pipe size	Connection type					
	Female NPT (F)	Male NPT (M)	Male NPT inlet / Female NPT outlet (MF)	Female Medium Pressure (FMP)	Female BSPP (FK6)	Female SAE (FSAE)
04 (1/4")	10,000	10,000	10,000	10,000	10,000	10,000
06 (3/8")	10,000	10,000	10,000	10,000	10,000	10,000
08 (1/2")	10,000	10,000	10,000	X	10,000	10,000
09 (5/16")	X	X	X	10,000	X	X
12 (3/4")	6,000	6,000	6,000	10,000	6,000	6,000
16 (1")	6,000	6,000	6,000	10,000	6,000	5,000

Standard temperature vs. pressure charts



BV01

Single isolation ball valve, low pressure range

Product description

A 1,000 psi / 70 bar rated single isolation ball valve, designed to give bubble tight shut off through 90° operation across the full operating temperature range. Totally enclosed soft seats offer both positive sealing and low operating torques.

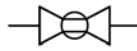
Features and benefits

- Single-piece body design reducing leak paths
- Bi-directional
- Precision machined stainless steel ball
- PTFE seating to the ball
- Lockable handle as standard
- Compact design to save space and weight
- Bubble tight shut-off

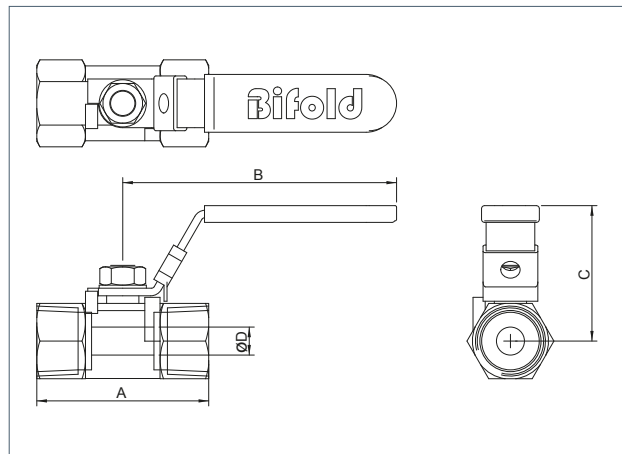
Technical data

- Material grade – ASTM A351 CF8M stainless steel body (standard)
- Operating temperature range -20 to +200 °C

SCHEMATIC



Typical GA drawing



BV01 selection table

Product code	Size	Rated	Cv (US Gallon)	'A' (mm)	'B' (mm)	'C' (mm)	Ø 'D' (mm)	Weight (Kg)
BV0104F025TT1K1K-N	¼" NPT	1,000 psi / 70 bar	2.5	40.0	71.0	35.0	5.0	0.07
BV0108F029.2TT1K1K-N	½" NPT	1,000 psi / 70 bar	4.8	57.0	95.0	44.0	9.2	0.16
BV0112F0212.5TT1K1K-N	¾" NPT	1,000 psi / 70 bar	9.5	59.0	95.0	48.0	12.5	0.25
BV0116F0215TT1K1K	1" NPT	1,000 psi / 70 bar	14.0	71.0	103.0	50.0	15.0	0.43
BV0132F0232TT1K1K	2" NPT	1,000 psi / 70 bar	58.0	100.0	127.0	74.5	32.0	1.50

BV02

3-way ball valve, low pressure range

Product description

A 1,000 psi / 70 bar rated 3-way ball valve, designed to provide a bubble tight shut off through 90° operation across the full operating temperature range. The four seat design prevents leakage across the cavity and provides accurate alignment to the ball.

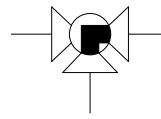
Features and benefits

- Live loaded stem design provides automatic adjustment required due to wear and pressure temperature fluctuations
- Anti-blowout stem internally loaded
- Precision machined stainless steel ball
- PTFE seating to the ball
- Lockable handle as standard
- ISO 5211 Mounting pad for direct actuator mounting
- Available in 'T' ported configuration

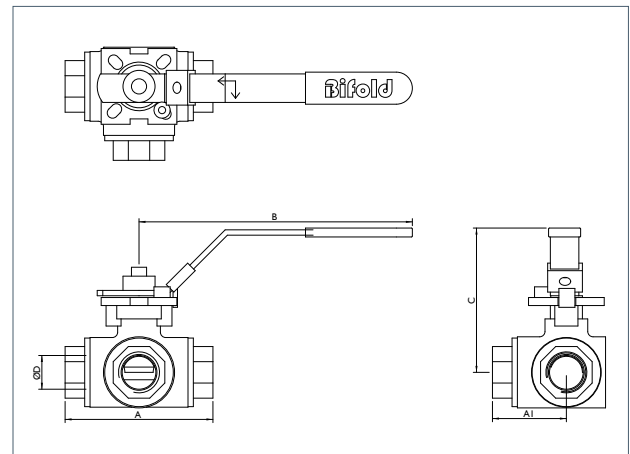
Technical data

- Material grade – ASTM A351 CF8M stainless steel body (standard)
- Operating temperature range -20 to +200 °C

SCHEMATIC



Typical GA drawing



BV02 selection table

Product code	Size	Rated	Cv (US Gallon)	'A' (mm)	'A1' (mm)	'B' (mm)	'C' (mm)	Ø 'D' (mm)	Weight (Kg)
BV02SL04F0211TT1KLK	¼" NPT	1,000 psi / 70 bar	7.0	72.0	36.0	140.0	75.0	11.0	0.66
BV02SL08F0212.5TT1KLK	½" NPT	1,000 psi / 70 bar	7.0	72.0	36.0	140.0	75.0	12.5	0.64
BV02SL12F0215TT1KLK	¾" NPT	1,000 psi / 70 bar	11.0	83.0	41.5	151.0	88.0	15.0	0.85
BV02SL16F0220TT1KLK	1" NPT	1,000 psi / 70 bar	15.0	99.0	49.5	166.0	93.0	20.0	1.46
BV02SL32F0238TT1KLK	2" NPT	1,000 psi / 70 bar	70.0	149.0	74.5	263.0	154.0	38.0	5.24

BV01

Single isolation ball valve range

Product description

A single isolate ball valve with pressures rated up to 10,000 psi / 690 bar. The single isolating ball valve is designed to give bubble tight shut off through 90° operation across the full operating temperature range of the valve. Totally enclosed soft seats offer both positive sealing and low operating torques.

Features and benefits

- Single-piece body design reducing leak paths
- Anti-blowout stem internally loaded
- Bi-directional
- Precision machined stainless steel ball
- Compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- O-ring stem and body seals
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Bubble tight shut-off
- Low operating torque
- Pressure energised stem sealing

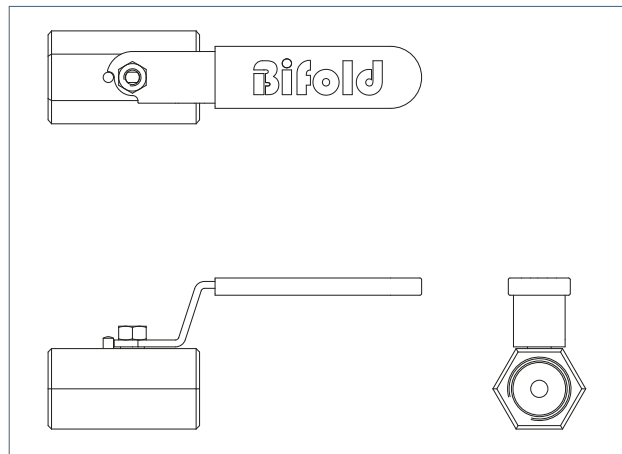
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



Typical GA drawing



BV01 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
BV0104F025ERV6K	¼" Female NPT	6,000 psi / 414 bar	1.9	86.0
BV0104F025ERV10K	¼" Female NPT	10,000 psi / 690 bar	1.9	86.0
BV0106F025ERV6K	⅜" Female NPT	6,000 psi / 414 bar	1.9	86.0
BV0106F025ERV10K	⅜" Female NPT	10,000 psi / 690 bar	1.9	86.0

BV01

Single isolation ball valve range

BV01 selection chart

Ordering example

BV01 - 04F - 02 - 5 - E - RS - 6K - -NT

Model code

BV01 = Single isolation ball valve

Nominal pipe size & connection type

04F = 1/4" Female NPT

06F = 3/8" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)

26 = F51 / UNS S31803 Duplex

38 = LF2 / Carbon Steel

39 = F55 / UNS S32760 Super Duplex

Series

5 = Standard

Seat material

T = Glass filled PTFE (1,000 psi / 70 bar maximum cold working pressure)

E = PEEK (10,000 psi / 690 bar maximum cold working pressure)

Seal arrangement stem and body

RS = RTFE / Nitrile

RV = RTFE / Viton

RV9 = RTFE / V91A

RE9 = RTFE / E985

Pressure rating

1K = 1,000 psi / 70 bar maximum cold working pressure

6K = 6,000 psi / 414 bar maximum cold working pressure

10K = 10,000 psi / 690 bar maximum cold working pressure

F.A.T. options

NO LETTER = Standard F.A.T.

-NT = Nitrogen F.A.T. (for gas service)

BV01

Single isolation ball valve – panel mount range

Product description

A single isolate ball valve with pressures rated up to 10,000 psi / 690 bar. The single isolating ball valve is designed to give bubble tight shut off through 90° operation across the full operating temperature range of the valve. Totally enclosed soft seats offer both positive sealing and low operating torques.

Features and benefits

- Single-piece construction reducing leak paths
- Bi-directional
- Precision machined stainless steel ball.
- Compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- O-ring stem and body seals
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Bubble tight shut-off
- Low operating torque
- Panel mount as standard

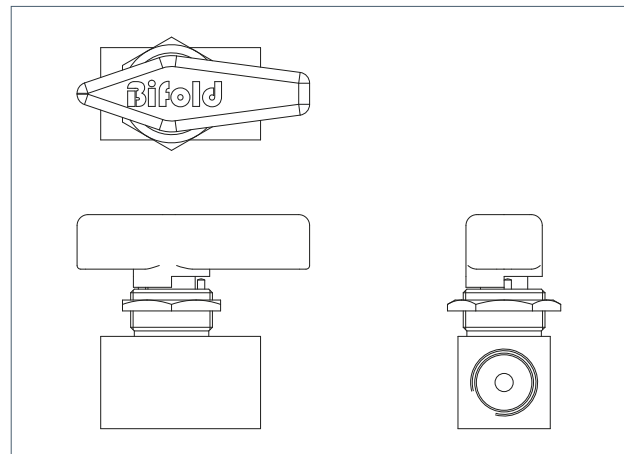
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



Typical GA drawing



BV01 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
BV0104F025EV6KPM	1/4" Female NPT	6,000 psi / 414 bar	1.9	86.0
BV0104F025EV10KPM	1/4" Female NPT	10,000 psi / 690 bar	1.9	86.0
BV0106F025EV6KPM	3/8" Female NPT	6,000 psi / 414 bar	1.9	86.0
BV0106F025EV10KPM	3/8" Female NPT	10,000 psi / 690 bar	1.9	86.0

BV01

Single isolation ball valve – panel mount range

BV01 selection chart

Ordering example

BV01 - 04F - 02 - 5 - E - RV - 6K - PM - -NT

Model code

BV01 = Single isolation ball valve – panel mount

Nominal pipe size & connection type

04F = 1/4" Female NPT

06F = 3/8" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)

26 = F51 / UNS S31803 Duplex

38 = LF2 / Carbon Steel

39 = F55 / UNS S32760 Super Duplex

Series

5 = Standard

Seat material

T = Glass filled PTFE (1,000 psi / 70 bar maximum cold working pressure)

E = PEEK (10,000 psi / 690 bar maximum cold working pressure)

Seal arrangement stem and body

RS = RTFE / Nitrile

RV = RTFE / Viton

RV9 = RTFE / V91A

RE9 = RTFE / E985

Pressure rating

1K = 1,000 psi / 70 bar maximum cold working pressure

6K = 6,000 psi / 414 bar maximum cold working pressure

10K = 10,000 psi / 690 bar maximum cold working pressure

Mounting option

PM = Panel Mount (Standard)

F.A.T. options

NO LETTER = Standard F.A.T.

-NT = Nitrogen F.A.T. (for gas service)

BV01

Single isolation ball valve range

Product description

A single isolate ball valve with pressures rated up to 10,000 psi / 690 bar. The single isolating ball valve is designed to give bubble tight shut off through 90° operation across the full operating temperature range of the valve. Totally enclosed soft seats offer both positive sealing and low operating torques.

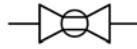
Features and benefits

- Anti-blowout stem internally loaded
- Bi-directional
- Precision machined stainless steel ball
- Lever type handle as standard
- Compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- RTFE stem seals and O-ring body seals
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Bubble tight shut-off
- Low operating torque
- Pressure energised stem sealing
- Seal integrity maintained if handle is removed

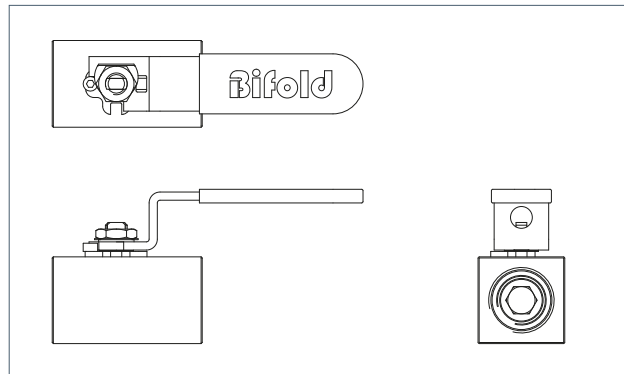
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



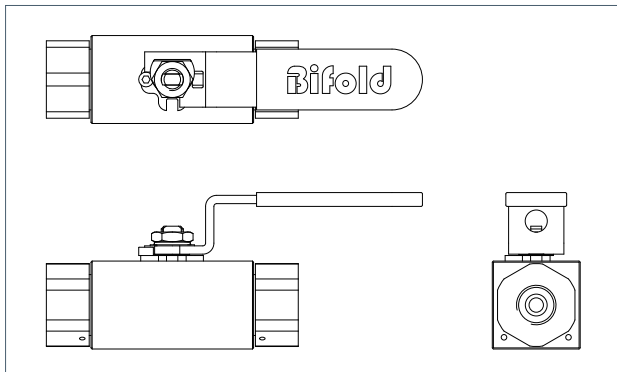
Typical GA drawing



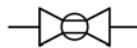
BV01 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
BV0108F0210ERV6K	½" NPT	6,000 psi / 414 bar	9.6	438.0
BV0108F0210ERV10K	½" NPT	10,000 psi / 690 bar	9.6	438.0

Three piece configuration



SCHEMATIC



Valves with connection types other than Female NPT will be supplied in the above three piece configuration.

BV01

Single isolation ball valve range

BV01 selection chart

Ordering example

BV01 - 04 - F - 02 - 10 - E - H - 10K - LK - PM - -NT

Model code

BV01 = Single isolation ball valve

Nominal pipe size

04 = 1/4"
06 = 3/8"
08 = 1/2"
09 = 9/16"
12 = 3/4"
16 = 1"

Connection type

F = Female NPT
FMP = Female medium pressure (Series 10 option only)
FK6 = Female BSPP
FSAE = Female SAE

} Three piece configuration

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Series

10 = Standard
20 = For nominal sizes: 3/4" to 1" excluding FMP (6,000 psi / 414 bar maximum cold working pressure)

Seat material

T = Glass filled PTFE (1,000 psi / 70 bar maximum cold working pressure)
E = PEEK (10,000 psi / 690 bar maximum cold working pressure)

Seal arrangement stem and body

H = RTFE
RS = RTFE / Nitrile
RV = RTFE / Viton
RV9 = RTFE / V91A
RE9 = RTFE / E985

Pressure rating

1K = 1,000 psi / 70 bar maximum cold working pressure
6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

The pressure may be limited by the connection type, please refer to the connection pressure ratings table on page 13

Handle options

NO LETTER = Standard handle
LK = Lockable handle
PH = Pointer paddle handle

Mounting options

NO LETTER = Pipe mount (standard)
PM = Panel mount (standard for 20mm bore sizes)

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

BV02

3-way ball valve range

Product description

A 3-way ball valve with pressures rated up to 10,000 psi / 690 bar. The 3-way ball valve is designed to give bubble tight shut off through 90° operation across the full operating temperature range of the valve. The standard 'L' port configuration diverts one pressure supply between two outlets. Totally enclosed soft seats offer both positive sealing and low operating torques.

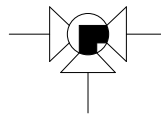
Features and benefits

- Anti-blowout stem internally loaded
- Precision machined stainless steel ball
- Lever type handle as standard
- Compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- RTFE stem seals and O-ring body seals
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Bubble tight shut-off
- Low operating torque
- Pressure energised stem sealing
- Seal integrity maintained if handle is removed
- Available in 'T' ported configuration

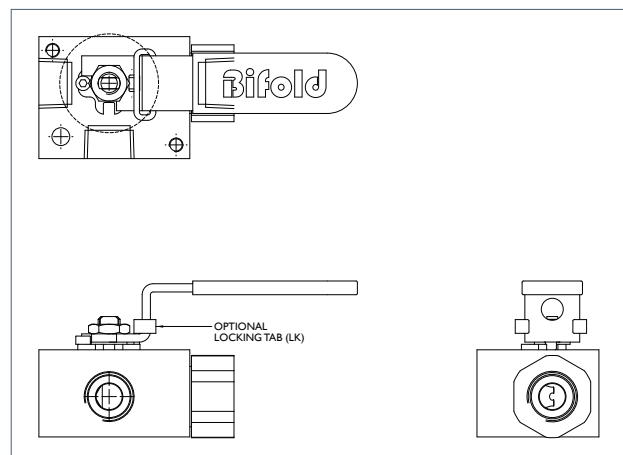
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



Typical GA drawing



BV02 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
BV02SL08F0210ERV6K	½" NPT	6,000 psi / 414 bar	4.3	196.0
BV02SL08F0210ERV10K	½" NPT	10,000 psi / 690 bar	4.3	196.0

BV02

3-way ball valve range

BV02 selection chart

Ordering example

BV02 - S - L - 04 - F - 02 - 10 - E - H - 10K - LK - -NT

Model code

BV02 = 3-way ball valve

Configuration

S = Side entry
B = Bottom entry

Flow pattern

L = L ported ball
T = T ported ball

Nominal pipe size

04 = 1/4"
06 = 3/8"
08 = 1/2"
09 = 9/16"
12 = 3/4"
16 = 1"

Connection type

F = Female NPT
FMP = Female medium pressure (Series 10 option only)
FK6 = Female BSPP
FSAE = Female SAE

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Series

10 = Standard
20 = For nominal sizes: 3/4" to 1" excluding FMP (6,000 psi / 414 bar maximum cold working pressure)

Seat material

T = Glass filled PTFE (1,000 psi / 70 bar maximum cold working pressure)
E = PEEK (10,000 psi / 690 bar maximum cold working pressure)

Seal arrangement stem and body

H = RTFE
RS = RTFE / Nitrile
RV = RTFE / Viton
RV9 = RTFE / V91A
RE9 = RTFE / E985

Pressure rating

1K = 1,000 psi / 70 bar maximum cold working pressure
6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

The pressure may be limited by the connection type, please refer to the connection pressure ratings table on page 13

Handle options

NO LETTER = Standard handle
LK = Lockable handle
PH = Pointer paddle handle

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

BV05

Double block and bleed, ball and needle valve manifold range

Product description

A double block and bleed ball - needle - ball valve manifold with pressures rated up to 10,000 psi / 690 bar. Manufactured from barstock, the two inline balls are the primary and secondary isolating valves with a needle type valve for the vent facility. The ball valve is designed to give bubble tight shut off through a 90° operation across the full operating temperature range of the valve.

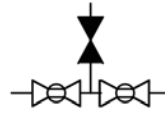
Features and benefits

- Single-piece construction reducing leak paths
- Anti-blowout stem internally loaded
- Bi-directional
- Precision machined stainless steel balls
- Lever type handles as standard
- Compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- RTFE stem seals and O-ring body seals
- Stem seal design prevents galling and contamination
- Panel mount as standard
- Thread milled connections for improved sealing
- Bubble tight shut-off
- Low operating torque
- Pressure energised stem sealing

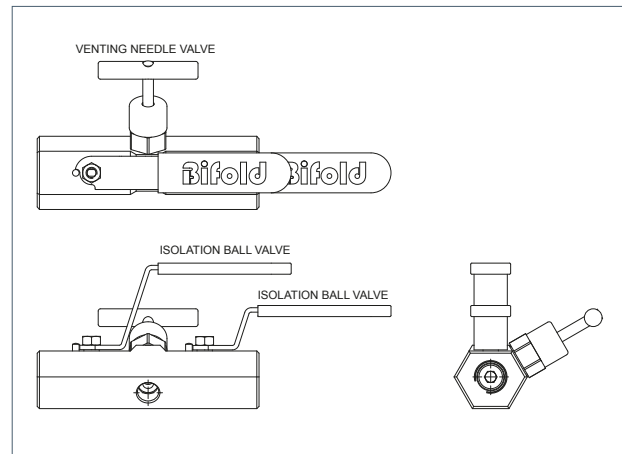
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHMATIC



Typical GA drawing



BV05 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
BV0504F02F025ERV6K	1/4" NPT	6,000 psi / 414 bar	1.3	58.0
BV0504F02F025ERV10K	1/4" NPT	10,000 psi / 690 bar	1.3	58.0
BV0506F02F025ERV6K	3/8" NPT	6,000 psi / 414 bar	1.3	58.0
BV0506F02F025ERV10K	3/8" NPT	10,000 psi / 690 bar	1.3	58.0

BV05

Double block and bleed, ball and needle valve manifold range

BV05 selection chart

Ordering example

BV05 - 04F - 02F - 02 - 5 - E - RV - 10K - AV - PV - -NT

Model code

BV05 = Double block & bleed, ball & needle valve manifold

Nominal pipe size & connection type

04F = 1/4" Female NPT

06F = 3/8" Female NPT

Vent connection

02F = 1/8" Female NPT (standard)

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)

26 = F51 / UNS S31803 Duplex

38 = LF2 / Carbon Steel

39 = F55 / UNS S32760 Super Duplex

Series

5 = Standard

Seat material

T = Glass filled PTFE (1,000 psi / 70 bar maximum cold working pressure)

E = PEEK (10,000 psi / 690 bar maximum cold working pressure)

Seal arrangement stem and Body

RS = RTFE / Nitrile

RV = RTFE / Viton

RV9 = RTFE / V91A

RE9 = RTFE / E985

Pressure rating

1K = 1,000 psi / 70 bar maximum cold working pressure

6K = 6,000 psi / 414 bar maximum cold working pressure

10K = 10,000 psi / 690 bar maximum cold working pressure

Vent operator options

NO LETTER = Standard vent

AV = Anti-tamper vent

Vent outlet options

NO LETTER = No plug vent (standard)

PV = Plugged vent

F.A.T. options

NO LETTER = Standard F.A.T.

-NT = Nitrogen F.A.T. (for gas service)

BV05

Double block and bleed, ball and needle valve manifold range

Product description

A double block and bleed ball-needle-ball valve manifold with pressures rated up to 10,000 psi / 690 bar. Manufactured from barstock, the two inline balls provide unrestricted flow with a roddable facility, and are the primary and secondary isolating valves with a needle type valve for the vent facility. The ball valve is designed to give bubble tight shut off through a 90° operation across the full operating temperature range of the valve.

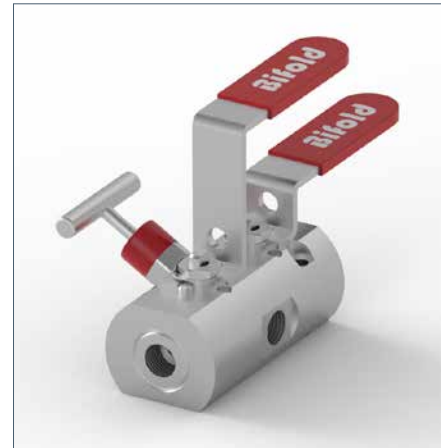
Features and benefits

- Anti-blowout stem internally loaded
- Bi-directional
- Precision machined stainless steel balls
- Compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Lever type handle as standard
- RTFE stem seals and O-ring body seals
- Stem seal design prevents galling and contamination
- Panel mount as standard
- Thread milled connections for improved sealing
- Bubble tight shut-off
- Low operating torque
- Pressure energised stem sealing

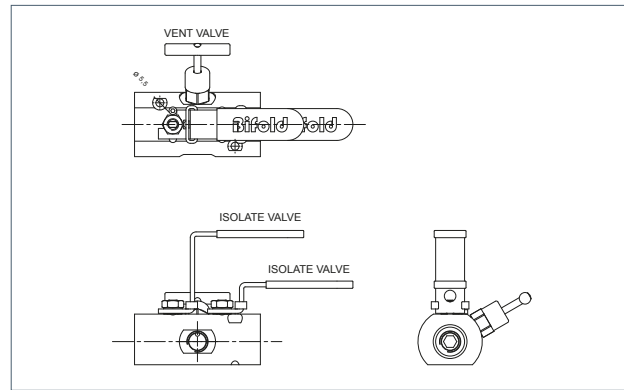
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



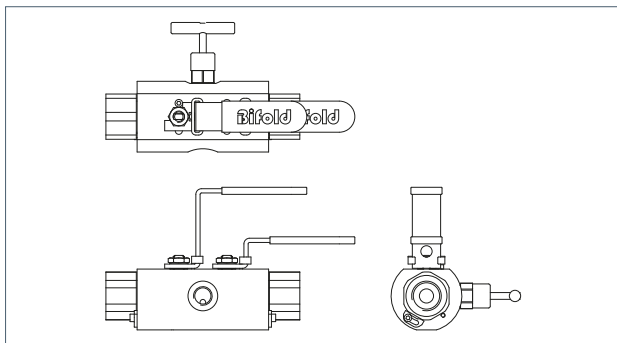
Typical GA drawing



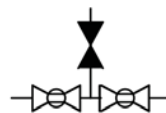
BV05 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
BV0504F0210ERV6K	¼" NPT	6,000 psi / 414 bar	7.6	345.0
BV0504F0210ERV10K	¼" NPT	10,000 psi / 690 bar	7.6	345.0
BV0508F04F0210ERV6K	½" NPT	6,000 psi / 414 bar	7.6	345.0
BV0508F04F0210ERV10K	½" NPT	10,000 psi / 690 bar	7.6	345.0

Three piece configuration



SCHEMATIC



Valves with connection types other than Female NPT will be supplied in the above three piece configuration.

BV05

Double block and bleed, ball and needle valve manifold range

BV05 selection chart

Ordering example

BV05 - 04 - F - 02 - 10 - E - RV - 10K - LK - AV - PV - -NT

Model code

BV05 = Double block & bleed, ball & needle valve manifold

Nominal pipe size

04 = 1/4"
06 = 3/8"
08 = 1/2"
09 = 9/16"
12 = 3/4"
16 = 1"

Connection type

F = Female NPT
FMP = Female medium pressure (Series 10 option only)
FK6 = Female BSPP
FSAE = Female SAE

} Three piece configuration

Vent connection

NO LETTER = 1/4" Female NPT (NO LETTER if nominal pipe size / connection type option is 04F)
04F = 1/4" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Series

10 = Standard
20 = For nominal sizes: 3/4" to 1" Excluding FMP (6,000 psi / 414 bar maximum cold working pressure)

Seat material

T = Glass filled PTFE (1,000 psi / 70 bar maximum cold working pressure)
E = PEEK (10,000 psi / 690 bar maximum cold working pressure)

Seal arrangement stem and body

RS = RTFE / Nitrile
RV = RTFE / Viton
RV9 = RTFE / V91A
RE9 = RTFE / E985

Pressure rating

1K = 1,000 psi / 70 bar maximum cold working pressure
6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

The pressure may be limited by the connection type, please refer to the connection pressure ratings table on page 13

Handle options

NO LETTER = Standard handle
LK = Lockable handle
PH = Pointer paddle handle

Vent outlet options

NO LETTER = No plug vent (standard)
PV = Plugged vent

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

NV01

Single isolation needle valve range

Product description

A 6,000 psi / 414 bar or 10,000 psi / 690 bar rated, single isolation needle valve. The metal-to-metal non-rotating tip and metal-to-metal body to bonnet interface offer leak tight sealing across the full operating temperature range of the valve.

Features and benefits

- Single-piece construction reducing leak paths
- Anti-blowout stem
- Non-rotating, anti-galling tip as standard
- Viton / RTFE stem sealing – maintenance free
- Metal-to-metal seating
- Compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- Back seating needle
- Stem seal design prevents galling and contamination
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Pressure energised stem sealing
- Metal-to-metal body joint to prevent thread contamination

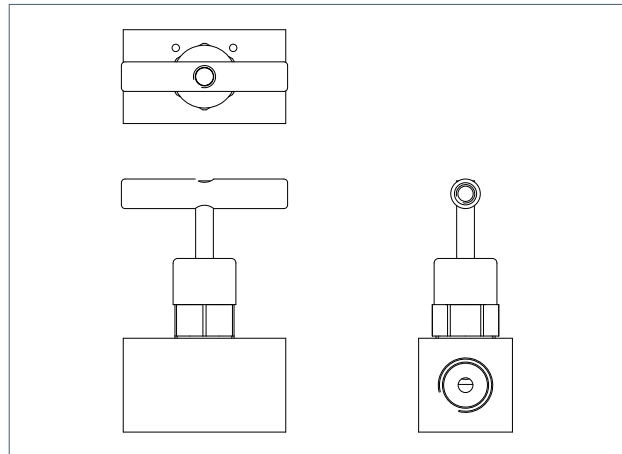
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



Typical GA drawing



NV01 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
NV0104F02M5V6K	¼" NPT	6,000 psi / 414 bar	0.48	22.0
NV0104F02M5V10K	¼" NPT	10,000 psi / 690 bar	0.48	22.0
NV0108F02M5V6K	½" NPT	6,000 psi / 414 bar	0.48	22.0
NV0108F02M5V10K	½" NPT	10,000 psi / 690 bar	0.48	22.0

NV01

Single isolation needle valve range

NV01 selection chart

Ordering example

NV01 - 04 - F - 02 - M - 5 - S - 6K - LK - PM - -NT

Model code

NV01 = Single isolation needle valve

Nominal pipe size

04 = 1/4"
06 = 3/8"
08 = 1/2"
09 = 9/16"
12 = 3/4"
16 = 1"

Connection type

F = Female NPT
M = Male NPT
MF = Male NPT inlet / Female NPT outlet
FMP = Female medium pressure (Series 3 and 5 option only)
FK6 = Female BSPP
FSAE = Female SAE

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Tip style

M = Metal ball
MT = Metal tip (standard for Series 8 option, non-standard materials and nitrogen F.A.T. valves)

Series

3 = 04FMP only
5 = Standard
8 = For nominal sizes: 3/4" to 1" excluding FMP (6,000 psi / 414 bar maximum cold working pressure)

Seal arrangement stem and body

S = Nitrile
V = Viton
V9 = V91A
E9 = E985

Pressure rating

6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

The pressure may be limited by the connection type, please refer to the connection pressure ratings table on page 13

Handle options

NO LETTER = Standard handle
LK = Lockable handle

Mounting options

NO LETTER = Pipe mount (standard)
PM = Panel mount (standard for Series 8 option)

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

NV03

Block and bleed needle valve manifold range – captive vent plug

Product description

A single isolation valve block and captive vent plug bleed gauge / instrument manifold, with pressures rated up to 10,000 psi / 690 bar. The valve is suitable for either panel or pipe mounting. The manifold design permits isolation and controlled venting of the instrument for calibration and or removal from the circuit, whilst leaving the process intact.

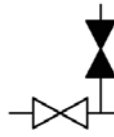
Features and benefits

- Single-piece construction reducing leak paths
- Anti-blowout stem
- Non-rotating, anti-galling tip as standard
- Non-removable stem on the captive vent plug
- Viton / RTFE stem sealing – maintenance free
- Metal-to-metal seating
- Compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- Back seating needle
- Stem seal design prevents galling and contamination
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Bubble tight shut-off
- Pressure energised stem sealing
- Metal-to-metal body joint to prevent thread contamination

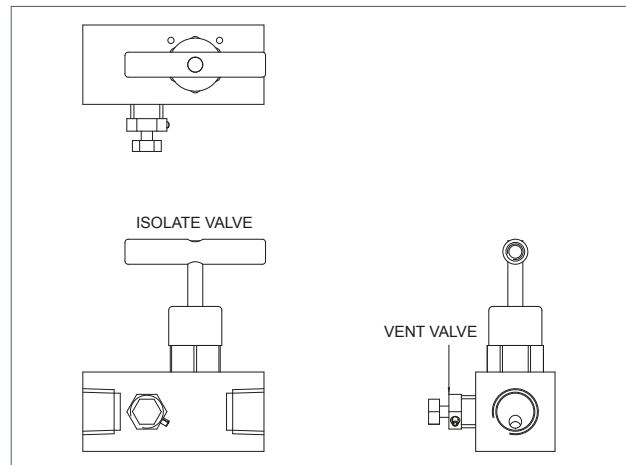
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



Typical GA drawing



NV03 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
NV0304F02M5V6K	¼" NPT	6,000 psi / 414 bar	0.48	22.0
NV0304F02M5V10K	¼" NPT	10,000 psi / 690 bar	0.48	22.0
NV0308F02M5V6K	½" NPT	6,000 psi / 414 bar	0.48	22.0
NV0308F02M5V10K	½" NPT	10,000 psi / 690 bar	0.48	22.0

NV03

Block and bleed needle valve manifold range – captive vent plug

NV03 selection chart

Ordering example

NV03 - 04 - F - 02 - M - 5 - S - 6K - LK - -NT

Model code

NV03 = Block & bleed needle valve manifold – captive vent plug

Nominal pipe size

04 = 1/4"
06 = 3/8"
08 = 1/2"

Connection type

F = Female NPT
M = Male NPT
MF = Male NPT inlet / Female NPT outlet

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Tip style

M = Metal ball
MT = Metal tip (standard for non-standard materials and nitrogen F.A.T. valves)

Series

5 = Standard

Seal arrangement

S = Nitrile
V = Viton
V9 = V91A
E9 = E985

Pressure rating

6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

The pressure may be limited by the connection type, please refer to the connection pressure ratings table on page 13

Handle options

NO LETTER = Standard handle
LK = Lockable handle

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

NV22

Block and bleed needle valve compact manifold range

Product description

A 6,000 psi / 414 bar or 10,000 psi / 690 bar rated, two valve compact block and bleed gauge / instrument manifold. The manifold design permits controlled venting of the instrument for calibration and or removal from the circuit, whilst leaving the process intact.

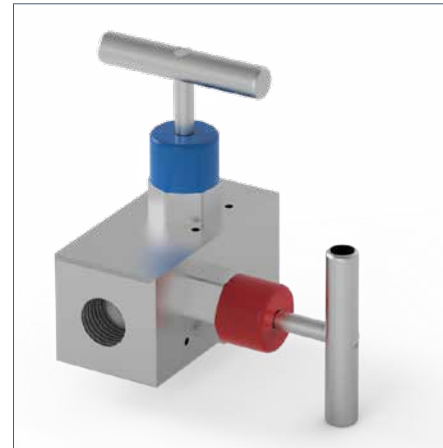
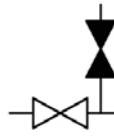
Features and benefits

- Single-piece construction reducing leak paths
- Anti-blowout stem
- Non-rotating, anti-galling tip as standard
- Viton / RTFE stem sealing – maintenance free
- Metal-to-metal seating
- Back seating needle
- Full material traceability and individual serial number stamped on the valve
- Compact design to save space and weight
- Stem seal design prevents galling and contamination
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Pressure energised stem sealing
- Metal-to-metal body joint to prevent thread contamination

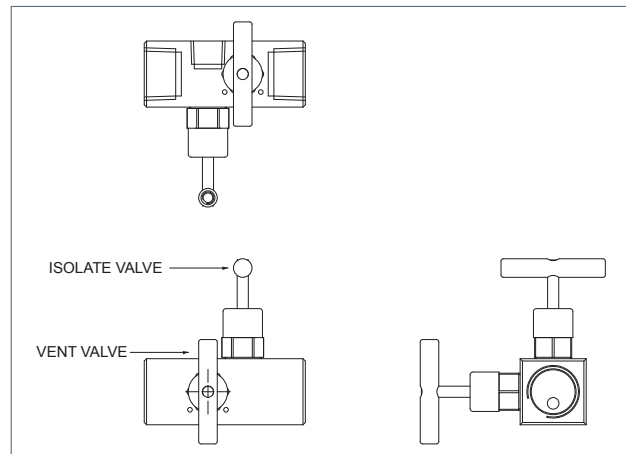
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



Typical GA drawing



NV22 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
NV2204F02M3V6K	¼" NPT	6,000 psi / 414 bar	0.17	7.6
NV2204F02M3V10K	¼" NPT	10,000 psi / 690 bar	0.17	7.6
NV2208F04F02M3V6K	½" NPT	6,000 psi / 414 bar	0.17	7.6
NV2208F04F02M3V10K	½" NPT	10,000 psi / 690 bar	0.17	7.6

NV22

Block and bleed needle valve compact manifold range

NV22 selection chart

Ordering example

NV22 - 04 - F - 04F - 02 - M - 5 - S - 6K - LK - AV - PV - -NT

Model code

NV22 = Block & bleed needle valve compact manifold

Nominal pipe size

04 = 1/4"
06 = 3/8"
08 = 1/2"

Connection type

F = Female NPT
M = Male NPT
MF = Male NPT inlet / Female NPT outlet
FM = Female NPT inlet / Male NPT outlet

Vent connection

NO LETTER = 1/4" Female NPT (NO LETTER if nominal pipe size / connection type option is 04F)
04F = 1/4" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Tip style

M = Metal ball
MT = Metal tip (standard for non-standard materials and nitrogen F.A.T. valves)

Series

3 = Standard

Seal arrangement

S = Nitrile
V = Viton
V9 = V91A
E9 = E985

Pressure rating

6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure
The pressure may be limited by the connection type, please refer to the connection pressure ratings table on page 13

Handle options

NO LETTER = Standard handle
LK = Lockable handle

Vent operator options

NO LETTER = Standard vent
AV = Anti-tamper vent

Vent outlet options

NO LETTER = No plug vent (standard)
PV = Plugged vent

F.A.T. Options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

NV04

Block and bleed needle valve manifold range

Product description

A 6,000 psi / 414 bar or 10,000 psi / 690 bar rated, two valve block and bleed gauge / instrument manifold. The angled bonnets allow for either panel or pipe mounting. The manifold design permits controlled venting of the instrument for calibration and/or removal from the circuit, whilst leaving the process intact.

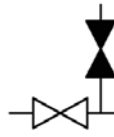
Features and benefits

- Single-piece construction reducing leak paths
- Anti-blowout stem
- Non-rotating, anti-galling tip as standard
- Viton / RTFE stem sealing – maintenance free
- Metal-to-metal seating
- Back seating needle
- Unique patented product, compact design to save space and weight
- European patent granted EP2242943
- Stem seal design prevents galling and contamination
- Full material traceability and individual serial number stamped on the valve
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Pressure energised stem sealing
- Metal-to-metal body joint to prevent thread contamination
- Panel mount as standard

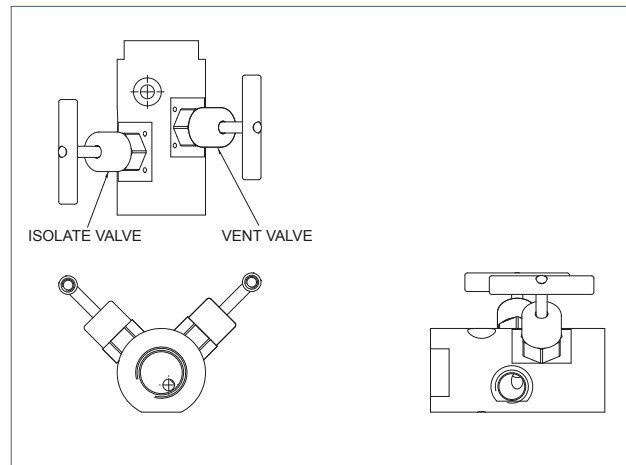
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHEMATIC



Typical GA drawing



NV04 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
NV0404F02M5V6K	¼" NPT	6,000 psi / 414 bar	0.39	18.0
NV0404F02M5V10K	¼" NPT	10,000 psi / 690 bar	0.39	18.0
NV0408F04F02M5V6K	½" NPT	6,000 psi / 414 bar	0.39	18.0
NV0408F04F02M5V10K	½" NPT	10,000 psi / 690 bar	0.39	18.0

NV04

Block and bleed needle valve manifold range

NV04 selection chart

Ordering example

NV04 - 04 - F - 04F - 02 - M - 5 - S - 6K - LK - AV - PV - -NT

Model code

NV04 = Block & bleed needle valve manifold

Nominal pipe size

04 = 1/4"
06 = 3/8"
08 = 1/2"
09 = 9/16"
12 = 3/4"
16 = 1"

Connection type

F = Female NPT
FMP = Female medium pressure (Series 3 and 5 option only)
FK6 = Female BSPP
FSAE = Female SAE

Vent connection

NO LETTER = 1/4" Female NPT (NO LETTER if Nominal pipe size / connection type option is 04F)
04F = 1/4" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Tip Style

M = Metal ball
MT = Metal tip (standard for Series 8 option, non-standard materials and nitrogen F.A.T. valves)

Series

3 = 04FMP only
5 = Standard
8 = For nominal sizes: 3/4" to 1" excluding FMP (6,000 psi / 414 bar maximum cold working pressure)

Seal arrangement

S = Nitrile
V = Viton
V9 = V91A
E9 = E985

Pressure rating

6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

The pressure may be limited by the connection type, please refer to the connection pressure ratings table on page 13

Handle options

NO LETTER = Standard handle
LK = Lockable handle

Vent operator options

NO LETTER = Standard vent
AV = Anti-tamper vent

Vent outlet options

NO LETTER = No plug vent (standard)
PV = Plugged vent

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

NV05

Double block and bleed needle valve manifold range

Product description

A 6,000 psi / 414 bar or 10,000 psi / 690 bar rated, double block and bleed manifold. The angled bonnets allow for either panel or pipe mounting. The manifold design permits controlled venting of the instrument for calibration and or removal from the circuit, whilst leaving the process intact.

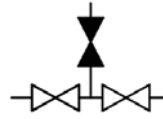
Features and benefits

- Single-piece construction reducing leak paths
- Anti-blowout stem
- Non-rotating, anti-galling tip as standard
- Viton / RTFE stem sealing – maintenance free
- Metal-to-metal seating
- Back seating needle
- Unique patented product, compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- European patent granted EP2242943
- Stem seal design prevents galling and contamination.
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard.
- Pressure energised stem sealing
- Metal-to-metal body joint to prevent thread contamination
- Panel mount as standard

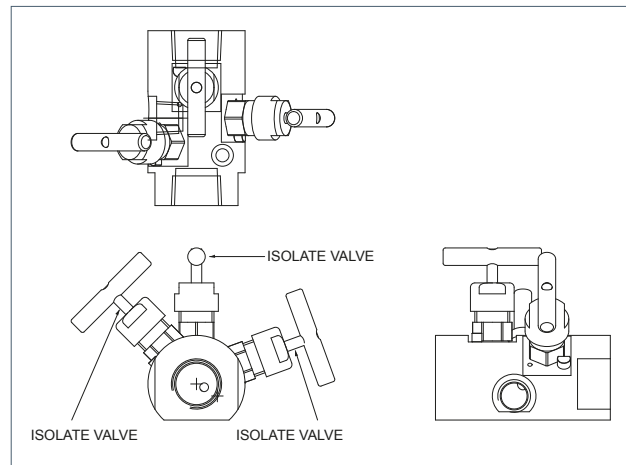
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHMATIC



Typical GA drawing



NV05 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
NV0504F02M5V6K	¼" NPT	6,000 psi / 414 bar	0.34	16.0
NV0504F02M5V10K	¼" NPT	10,000 psi / 690 bar	0.34	16.0
NV0508F04F02M5V6K	½" NPT	6,000 psi / 414 bar	0.34	16.0
NV0508F04F02M5V10K	½" NPT	10,000 psi / 690 bar	0.34	16.0

NV05

Double block and bleed needle valve manifold range

NV05 selection chart

Ordering example

NV05 - 04 - F - 04F - 02 - M - 5 - S - 6K - LK - AV - PV - -NT

Model code

NV05 = Double block & bleed needle valve manifold

Nominal pipe size

04 = 1/4"
06 = 3/8"
08 = 1/2"
09 = 9/16"
12 = 3/4"
16 = 1"

Connection type

F = Female NPT
FMP = Female medium pressure (Series 3 and 5 option only)
FK6 = Female BSPP
FSAE = Female SAE

Vent connection

NO LETTER = 1/4" Female NPT (NO LETTER if nominal pipe size / connection type option is 04F)
04F = 1/4" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Tip style

M = Metal ball
MT = Metal tip (standard for Series 8 Option, non-standard materials and nitrogen F.A.T. valves)

Series

3 = 04FMP only
5 = Standard
8 = For nominal sizes: 3/4" to 1" excluding FMP (6,000 psi / 414 bar maximum cold working pressure)

Seal arrangement

S = Nitrile
V = Viton
V9 = V91A
E9 = E985

Pressure rating

6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

The pressure may be limited by the connection type, please refer to the connection pressure ratings table on page 13

Handle options

NO LETTER = Standard handle
LK = Lockable handle

Vent operator options

NO LETTER = Standard vent
AV = Anti-tamper vent

Vent outlet options

NO LETTER = No Plug vent (standard)
PV = Plugged vent

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

NV06 1

Double block and bleed single station needle valve manifold range

Product description

A 6,000 psi / 414 bar or 10,000 psi / 690 bar rated, single station double block and bleed gauge / instrument compact panel mounted manifold. The manifold design permits controlled venting of the instrument for calibration and or removal from the circuit, whilst leaving the process intact. This unique design allows direct inline connection to pipe systems, through ¼" NPT connections, thus eliminating the requirement for additional 'T' and elbow fittings.

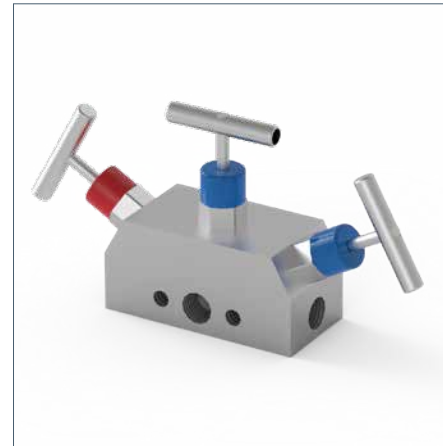
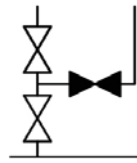
Features and benefits

- Single-piece construction reducing leak paths
- Anti-blowout stem
- Non-rotating, anti-galling tip as standard
- Viton / RTFE stem sealing – maintenance free
- Metal-to-metal seating
- Back seating needle
- Unique patented product, compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- European patent granted EP2225485
- Unrestricted through the bore
- Stem seal design prevents galling and contamination
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Pressure energised stem sealing
- Metal-to-metal body joint to prevent thread contamination
- Panel mount as standard

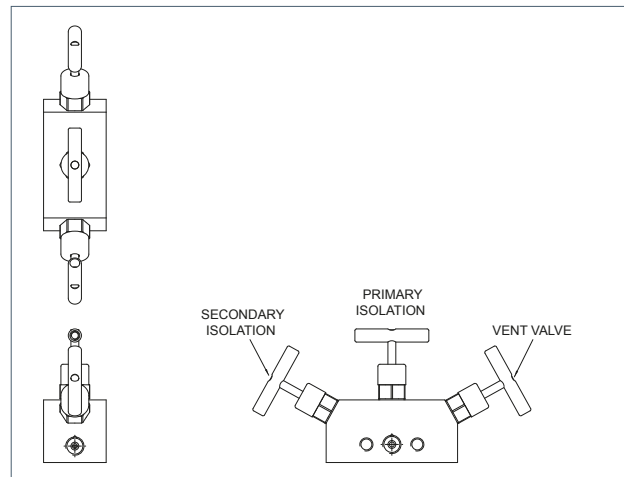
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

SCHMATIC



Typical GA drawing



NV06 1 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
NV06104F02M3V6K	¼" NPT	6,000 psi / 414 bar	0.12	5.4
NV06104F02M3V10K	¼" NPT	10,000 psi / 690 bar	0.12	5.4

NV06 1

Double block and bleed single station needle valve manifold range

NV06 1 selection chart

Ordering example

NV06 - 104 - F - 04F - 02 - M - 3 - S - 6K - LK - AV - PV - -NT

Model code

NV06 1 = Double block & bleed single station needle valve manifold

Nominal pipe size

04 = 1/4"
06 = 3/8"

Connection type

F = Female NPT

Vent & gauge connection

NO LETTER = 1/4" Female NPT (NO LETTER if nominal pipe size / connection type option is 04F)
04F = 1/4" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Tip style

M = Metal ball
MT = Metal tip (standard for non-standard materials and nitrogen F.A.T. valves)

Series

3 = Standard

Seal arrangement

S = Nitrile
V = Viton
V9 = V91A
E9 = E985

Pressure rating

6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

Handle options

NO LETTER = Standard handle
LK = Lockable handle

Vent operator options

NO LETTER = Standard vent
AV = Anti-tamper vent

Vent outlet options

NO LETTER = No plug vent (standard)
PV = Plugged vent

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

NV06 2

Double block and bleed two station needle valve manifold range

Product description

A 6,000 psi / 414 bar or 10,000 psi / 690 bar rated, two station double block and bleed gauge / instrument compact panel mounted manifold. The manifold design permits controlled venting of the instrument for calibration and or removal from the circuit, whilst leaving the process intact. This unique design allows direct inline connection to pipe systems, through ¼" NPT connections, thus eliminating the requirement for additional 'T' and elbow fittings.

Features and benefits

- Each station is a single-piece construction, reducing leak paths
- Anti-blowout stem
- Non-rotating, anti-galling tip as standard
- Viton / RTFE stem sealing – maintenance free
- Metal-to-metal seating
- Back seating needle
- Unique patented product, compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- Unrestricted through the bore
- Stem seal design prevents galling and contamination
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Pressure energised stem sealing
- Metal-to-metal body joint to prevent thread contamination
- European patent granted EP2225485
- Panel mount as standard

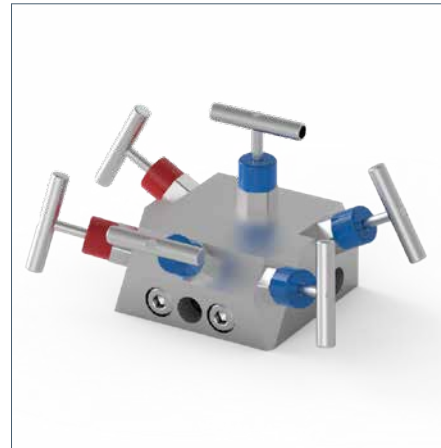
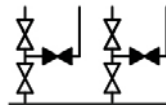
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

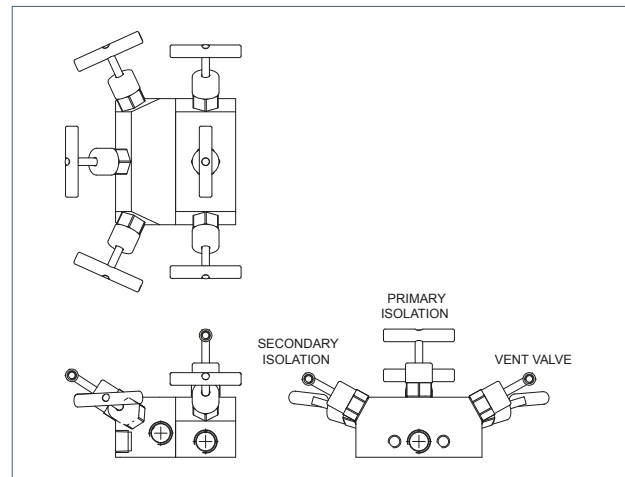
NV06 2 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
NV06204F02M3V6K	¼" NPT	6,000 psi / 414 bar	0.12	5.4
NV06204F02M3V10K	¼" NPT	10,000 psi / 690 bar	0.12	5.4

SCHEMATIC



Typical GA drawing



NV06 2

Double block and bleed two station needle valve manifold range

NV06 2 selection chart

Ordering example

NV06 - 204 - F - 04F - 02 - M - 3 - S - 6K - LK - AV - PV - -NT

Model code

NV06 2 = Double block & bleed two station needle valve manifold

Nominal pipe size

04 = 1/4"
06 = 3/8"

Connection type

F = Female NPT

Vent & gauge connection

NO LETTER = 1/4" Female NPT (NO LETTER if nominal pipe size / connection type option is 04F)
04F = 1/4" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Tip style

M = Metal ball
MT = Metal tip (standard for non-standard materials and nitrogen F.A.T. valves)

Series

3 = Standard

Seal arrangement

S = Nitrile
V = Viton
V9 = V91A
E9 = E985

Pressure rating

6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

Handle options

NO LETTER = Standard handle
LK = Lockable handle

Vent operator options

NO LETTER = Standard vent
AV = Anti-tamper vent

Vent outlet options

NO LETTER = No plug vent (standard)
PV = Plugged vent

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

NV06 3

Double block and bleed two station needle valve manifold range

Product description

A 6,000 psi / 414 bar or 10,000 psi / 690 bar rated, three station double block and bleed gauge / instrument compact panel mounted manifold. The manifold design permits controlled venting of the instrument for calibration and or removal from the circuit, whilst leaving the process intact. This unique design allows direct inline connection to pipe systems, through ¼" NPT connections, thus eliminating the requirement for additional 'T' and elbow fittings.

Features and benefits

- Each station is a single-piece construction, reducing leak paths
- Anti-blowout stem
- Non-rotating, anti-galling tip as standard
- Viton / RTFE stem sealing – maintenance free
- Metal-to-metal seating
- Back seating needle
- Unique patented product, compact design to save space and weight
- Full material traceability and individual serial number stamped on the valve
- European patent granted EP2225485
- Unrestricted through the bore
- Stem seal design prevents galling and contamination
- Thread milled connections for improved sealing
- In compliance with NACE MR-01-75 / ISO 15156 as standard
- Pressure energised stem sealing
- Metal-to-metal body joint to prevent thread contamination
- Panel mount as standard

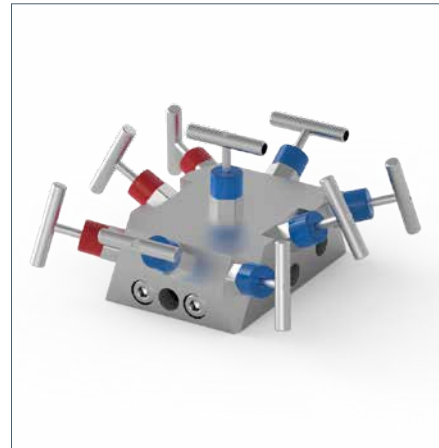
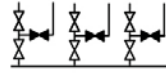
Technical data

- Material grades – UNS S31600 / S31603 stainless steel (standard)
- See selection chart opposite for alternative materials

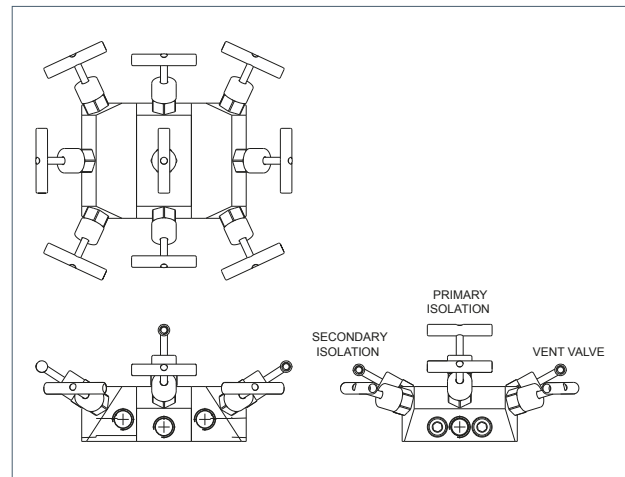
NV06 3 selection table

Product code	Size	Rated	Cv (US Gallon)	Flow rate @ 10 bar DP (l/min water)
NV06304F02M3V6K	¼" NPT	6,000 psi / 414 bar	0.12	5.4
NV06304F02M3V10K	¼" NPT	10,000 psi / 690 bar	0.12	5.4

SCHEMATIC



Typical GA drawing



NV06 3

Double block and bleed two station needle valve manifold range

NV06 3 selection chart

Ordering example

NV06 - 304 - F - 04F - 02 - M - 3 - S - 6K - LK - AV - PV - -NT

Model code

NV06 3 = Double block & bleed three station needle valve manifold

Nominal pipe size

04 = 1/4"
06 = 3/8"

Connection type

F = Female NPT

Vent & gauge connection

NO LETTER = 1/4" Female NPT (NO LETTER if nominal pipe size / connection type option is 04F)
04F = 1/4" Female NPT

Material

02 = UNS S31600 / S31603 Stainless Steel (standard)
26 = F51 / UNS S31803 Duplex
38 = LF2 / Carbon Steel
39 = F55 / UNS S32760 Super Duplex

Tip style

M = Metal ball
MT = Metal tip (standard for non-standard materials and nitrogen F.A.T. valves)

Series

3 = Standard

Seal arrangement

S = Nitrile
V = Viton
V9 = V91A
E9 = E985

Pressure rating

6K = 6,000 psi / 414 bar maximum cold working pressure
10K = 10,000 psi / 690 bar maximum cold working pressure

Handle options

NO LETTER = Standard handle
LK = Lockable handle

Vent operator options

NO LETTER = Standard vent
AV = Anti-tamper vent

Vent outlet options

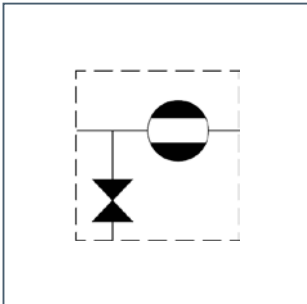
NO LETTER = No plug vent (standard)
PV = Plugged vent

F.A.T. options

NO LETTER = Standard F.A.T.
-NT = Nitrogen F.A.T. (for gas service)

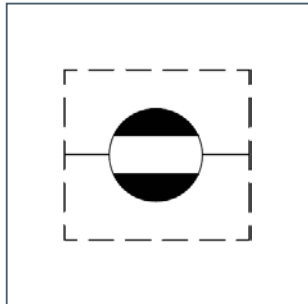
Extended ball valve product range

BV04



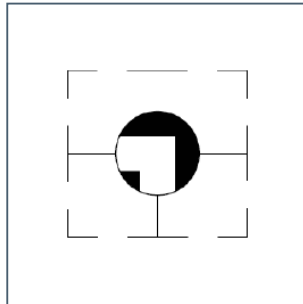
Block & bleed (ball/needle) manifold

BV11



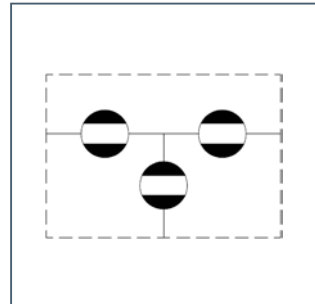
Single isolate (trunnion) ball valve

BV12 & BV47



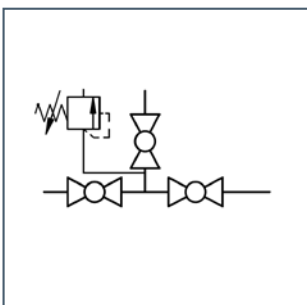
3-way (trunnion) ball valve

BV19



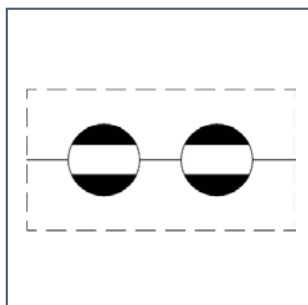
Double block & bleed (ball/ball/ball) manifold

BV21



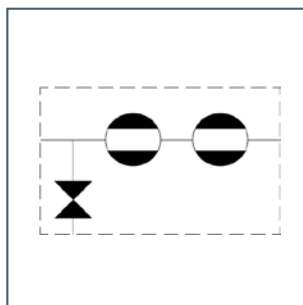
Accumulator manifold with pressure relief valve

BV27



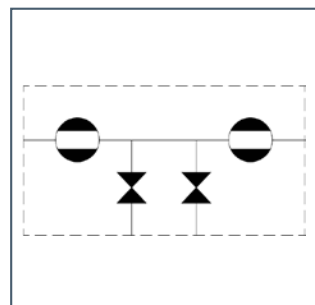
Double block (ball/ball) manifold

BV40



Block/block/bleed (ball/ball/needle) manifold

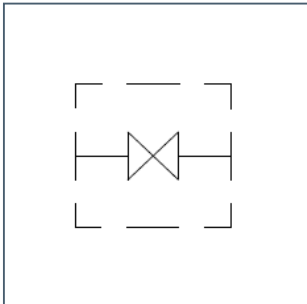
BV63



Double block & double bleed (ball/needle/needle/ball) manifold

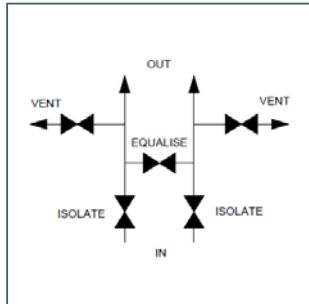
Extended needle valve & ball and needle manifold product range

NV02



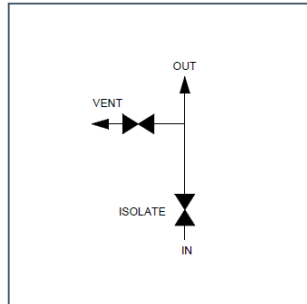
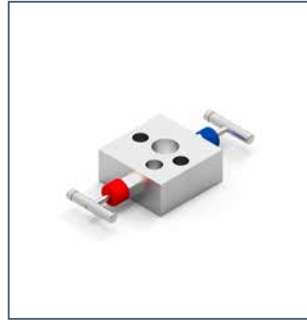
Single isolate angled pattern needle valve

NV13



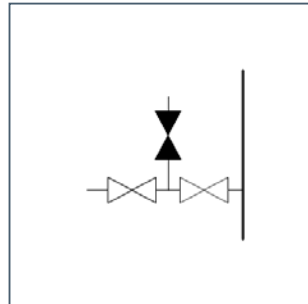
Direct & remote mount manifold (5 valve option)

NV21



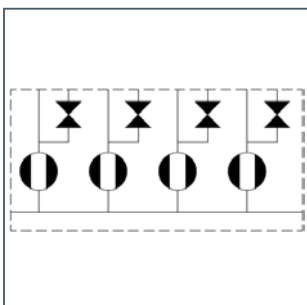
Direct & remote mount manifold (2 valve option)

NV55



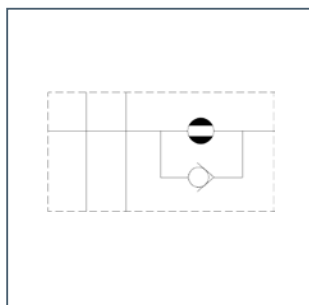
Direct pipe mount double block & bleed needle valve

BVA1286



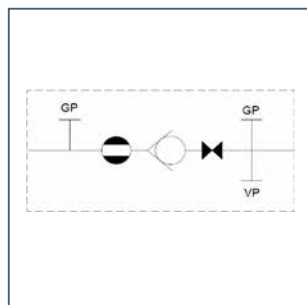
4 Station block bleed (ball/needle) manifold (common inlet)

BVA1304



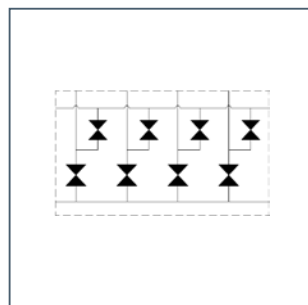
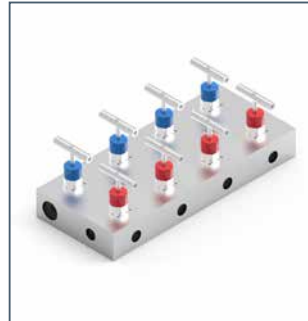
Ball valve with bypass check valve manifold

NVA0503



Ball valve / check valve / needle valve manifold

NVA0529



4 Station block bleed (needle/needle) manifold (common inlet & vent)

Site services

Rotork understands the value of prompt, punctual and superior site services. Rotork Site Services have specialist expertise, insight and experience in service support for mission-critical flow control and instrumentation solutions for oil and gas, water and wastewater, power, chemical process and industrial applications. We offer global frontline support backed by dedicated in-house experts.

Our service solutions increase plant efficiency and reduce maintenance costs, while workshop services return equipment to as-new condition. Our experience and understanding of the flow control industry means we have extensive insight and ideas of what we can do to provide significant value to our customers and their operations.

Rotork Site Services is comprised of two main areas; Lifetime Management and Site Services. Lifetime Management is the suite of services within Rotork Site Services which help you manage the risk associated with aging assets and includes our Reliability Services offering. Site Services comprises essential actuator service, repair, maintenance and upgrades.

Rotork has specialist expertise, insight and experience in flow control.

We provide insight into how we can deliver value to our customers.

Our service solutions increase plant efficiency and reduce maintenance costs.



Site services

Lifetime Management

The services available within Lifetime Management offer a complete solution to managing the risks associated with the life cycle of your equipment and their obsolescence (which compromise reliable performance and valuable uptime).

The aim of Lifetime Management is to provide you with constant support and minimum- to- no disruption to your production flow. It is a customisable service, offering designed to seamlessly maintain and improve your assets. We manage the inherent risks associated with advances in technology, component obsolescence and ageing equipment for you. We are committed to helping customers maximise the continuous, fault-free operation and working life of their actuators. Supporting the continuous and reliable operation of your plant allows for improved performance and increases in valuable uptime.

Lifetime Management covers:

- Reliability services
 - Basic - health check
 - Standard - planned maintenance
 - Premium - enhanced maintenance
- Upgrade services (Retrofit)
- Planned shutdown support
- Life cycle services
- Overhauls/refurbishment
- Customised spares programme
- Intelligent Asset Management (iAM) reporting



Site Services

Rotork Site Services (RSS) provides the essential on-site actuator service, repair, maintenance and upgrades part of our service offering, plus the commissioning of new actuators and applications. It includes off-site work completed at a Rotork Support Centre including recertification, automation, testing and product selection.

Our decades of experience in the industrial actuation and flow control markets means that customers can rely on us to understand their problems and to deliver reliable, economic solutions. Rotork's talented and experienced engineers have an in-depth understanding of the problems that are faced in the field and they know how to fix them.

On sites where providing evidence of valid asset certification is a legal requirement, Rotork engineers can carry out the necessary OEM level inspections and provide the statutory paperwork to comply with regulations.

- Field support
- Planned shutdown support
- Actuator workshop overhaul
- Valve automation services
 - On-site
 - Off-site
- Global support



rotork®



www.rotork.com

A full listing of our worldwide sales and service network is available on our website.

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As part of a process of on-going product development, Rotork reserves the right to amend and change specifications without prior notice. Published data may be subject to change. For the very latest version release, visit our website at www.rotork.com

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